## REMARKS

Claims 1-33 were pending in the instant application when last examined and were rejected. Claims 1-7, 9-11, 13-22, and 24-33 are being amended herein for greater clarity. No new matter is being added and claims 1-33 remain pending in the instant application. Reconsideration is respectfully requested.

## Teleconference with the Examiner

Applicant thanks the Examiner for the teleconference of May 18, 2003, and for his assistance in recommending an RCE be established in this case.

## Rejection under 35 U.S.C. § 103(a) over
## Yahoo Reference i.v.o. Nelson

In items 1- 4, on pages 2 through 3 of the Office Action, the Examiner rejected claims 1-33 under 35 U.S.C. § 103(a) as being unpatentable over Yahoo! Finance ("Yahoo")(1995) in view of U.S. Patent 4,823,265 to Nelson ("Nelson"). Applicant respectfully traverses.

Regarding claims 1-33, the Examiner asserts that Yahoo teaches the display of transactional information regarding the buying and selling of semi-fungible goods (Yahoo, page 1) by displaying a first book axis to represent orders placed for a semi fungible good (Yahoo, page 1, "A"), a second book axis for to represent orders placed for a second semi-fungible good (Yahoo, page 1, "B") and displaying bids (Yahoo, page 1, "C"), asks (Yahoo, page 1, "D"), prices (Yahoo, page 1, "F") and implied volatility (Yahoo, page 1, "G"), as well as "spreads" (Yahoo, page 1, "C-D"). Examiner further asserts that page 1 of Yahoo teaches display of this type of information on a panel (Yahoo, page 1, "Q") having "demarcation lines" (Yahoo, page 1, "I") and in which the orders are "displayed a predetermined distance apart" (Yahoo, page 1, "N").

The Examiner states that Nelson teaches a volume to be bid for (Nelson, Fig 4D) and where the goods are bought and sold by traders and investors (Nelson, Fig 3, 72; Fig 4a; Fig 4b; Fig 4c; and Fig 6). Examiner argues that it would have been obvious to one skilled in the art at

the time of the invention to combine Yahoo in view of Nelson to teach the above, and states that, "[t]he motivation to combine is to teach a method for processing transactions in options for underlying securities that as a result of repetition provide great stability as enunciated by Nelson (col. 1 lines 39-44)". Applicant respectfully traverses.

Applicant submits that claims 1-33 are not rendered obvious by the cited references, Yahoo, Nelson, nor by any combination thereof, because Yahoo and Nelson each suffer from a common flaw – neither Yahoo nor Nelson, or any combination thereof, provides a display of a book of orders for the good being traded. In fact, the cited combination of Yahoo and Nelson exemplify the very shortcomings of the prior art addressed by the inventions of claims 1 – 33. Yahoo illustrates a conventional display of trading information for a good, here options on a stock. In Yahoo, the information is presented only in numerical format. The differences between the different semi fungible goods are denoted only with a cryptic letter based system, i.e., "ZSUAZ.X" is used to denote the underlying option to stock of Sun Microsystems Corp. Yahoo provides a display of only the highest bid (Yahoo, page 1, "C") and only the lowest asked price (Yahoo, page 1, "D") for a particular good. For example, in the line denoted by symbol "ZSUAZ.X" (Yahoo, page 1, "A"), the highest bid is 1.10 and the lowest offer is 1.40. Applicant notes that Yahoo lacks any indication about the existence or nature of any other bids or offers for the good having symbol "ZSUAZ.X" that might be open or outstanding. In other words, the Yahoo reference does not provide a display of a book of orders.

Nelson also suffers from the same flaw. Nelson teaches a transactions processing system for renewable options trades. The system includes a means for entering customer data and renewable options data for storage. (Nelson, Abstract, lines 1 – 4) Nelson teaches tracking a criterion for renewing an option along with the data. (Nelson, Abstract, lines 5 – 6) Specifically, Nelson teaches an accounting and marketing system for handling transactions in renewable option securities. (Nelson, Abstract) The system is embodied by a terminal for entry and display of data including customer data such as a customer name and customer address, and renewable option data including data describing the security involved in the transaction, the number of options involved, the strike price of the option, and other relevant information. (Nelson, col. 1, lines 60 – 65) The system also includes means for processing the data entered in the terminal and means for providing data transfer between the terminal and the programmed processor means. (Nelson, col. 1, line 66 – col. 2, line 1) The system also includes data storage means

electrically interconnected to the program processor means for storing data entered at the terminal means, including customer data and transaction data. (Nelson, col. 2, lines 2 – 5) The system also provides for means for entry, display, processing, and storage of information including a period under which the renewable option will be renewed, and the renewable option premium if the option is to be renewed. (Nelson, col. 2, lines 6 – 9). Nelson, however, also suffers from the flaw of associating a single bid – offer price pair for each good, as illustrated by Fig. 5a, indicating a "write offer" price and a "buyer offer" price for each individual semi-fungible good, i.e., denoted by "strike price". (Nelson, Fig. 5a). Again, the result is the same as Yahoo – there is only one set of bid and offer prices associated with any particular semi-fungible good. In other words, neither Yahoo, nor Nelson, nor any combination thereof teaches or even suggests the display of a book of orders for a semi-fungible good.

Since the Yahoo and Nelson references do not teach display of each one of the orders for the good being traded in the market, a trader using these conventional approaches would not be provided all the information about the current state of the market in order to make a rational prediction about the likely direction that the market would move. Such a trader would suffer a serious disadvantage compared to a trader equipped with a system using the techniques of the inventions of claims 1-33. An individual equipped with the capabilities of the claimed inventions would be provided information about orders in the market in addition to the highest bid and the lowest offer. Each of applicant's claims as amended either include the claim element, display of <u>each one of the orders</u> for the good being traded in the market, either directly or by incorporation by depending from ones that recite this claim element. Accordingly, applicant submits that Yahoo, Nelson nor any combination thereof fails to teach, or even suggest the inventions of claims 1-33 for at least these reasons.

Applicant further respectfully asserts that Nelson simply addresses a different problem in a different manner that, alone or in the asserted combination, fails to teach, assert or otherwise render the inventions of claims 1 – 33 obvious. The passage cited in the Office Action for providing a motivation to combine, Nelson, col. 1, lines 39-44 reads as follows:

> The present invention solves these problems by providing a system and method
> for processing transactions in investment vehicles which provide purchasers with
> the leverage and other advantages of non-renewable options, yet which also have
> the greater stability and long-term value of investing in underlying securities.

Such a <u>renewable option system and method would allow for repeated renewal of the options for such time periods as the lifetime of the option owner or even have no expiration</u> (e.g. a permanent option). (Emphasis added.)

Nelson appears to teach methods and systems for tracking customer accounts comprising orders for renewable options for a desired period. Such is not the focus of the present invention, nor does the cited passage indicate a motivation to combine the renewable option accounting system of Nelson with the display of quotes of Yahoo. Even if one does combine these references, however, the combination thereof does not render the present invention obvious for at least the reasons discussed above.

Nelson even appears to teach away from representing the market for a good by displaying a collection of orders for the good of the inventions of claims 1-33, stating that the price of a renewable option may be: (i) a single price representing the current market price of the renewable option at each strike price; (ii) a price of each renewable option may also be set by the listing agent or the writing agent for the listing agent if the market is generated internally by the listing agent rather than through a multi-access exchange; or (iii) prices may even be set by standardized formulas. (Nelson, col. 6, lines 9 – 16).

In sum, applicant submits that Yahoo, Nelson or any combination thereof, fail to teach or suggest the inventions of claims 1-33 for at least these reasons. Accordingly, for at least the foregoing reasons, Applicant respectfully submits that claims 1 - 33 are patentable over the combination of Yahoo and Nelson. Withdrawal of the rejection and early allowance of claims 1 - 33 is therefore respectfully solicited.

## Rejection under 35 U.S.C. § 101

In item 6 on page 3 of the Office Action, the Examiner rejected claims 28-30 under 35 U.S.C. § 101 as lacking utility. Examiner states that, "[t]here is no concrete useful, or tangible output disclosed or actual functionality." Applicant respectfully traverses.

Title 35 U.S.C. § 101 provides:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

As the Supreme Court has held, Congress chose the expansive language of 35 U.S.C. 101 so as to include "anything under the sun that is made by man." Diamond v. Chakrabarty, 447 U.S. 303, 308-09, 206 USPQ 193, 197 (1980). In subsequent decisions, the Federal Circuit has sought to clarify the scope and boundaries of 35 U.S.C. 101, holding that patentability under 35 U.S.C. 101 requires that the invention must be: (i) directed to statutory subject matter, i.e., the invention must be a machine, manufacture, composition of matter or a process; (ii) a "useful" invention. The second requirement is the so-called "utility requirement" imposed by 35 U.S.C. § 101. As Applicant's claims 28 – 30 are directed to statutory subject matter, i.e., a computer readable storage, the second requirement that forms the basis of Examiner's rejection will be addressed in greater detail.

In State Street Bank & Trust Co. v. Signature Financial Group, Inc., 149 F.3d 1368 (Fed. Cir. 1998), the Federal Circuit Court held that in order to meet the utility requirement imposed by 35 U.S.C. § 101, an invention must produce a "useful, concrete and tangible result," State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents a mere idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96 (denying certificate of interference respondent's claimed process was not patentable where it yielded a chemical compound whose sole utility was its potential role as an object of use-testing)); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)(denying earlier filing date because chemical compound's practical utility was not disclosed so that one of ordinary skill in the art was not enabled to use the claimed invention)).

Although the courts have not provided precise definitions for the terms useful, concrete, and tangible, recent decisions provide instructive examples that may serve as a basis for comparison. The State Street Court, for instance, held that the "transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces 'a useful, concrete and tangible result' -- a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601. In re Alappat, 33 F.3d 1526 (Fed. Cir. 1994), provides another example of a useful,

concrete and tangible result. The <u>Alappat</u> Court held that claims drawn to a rasterizer for converting discrete waveform data samples into anti-aliased pixel illumination intensity data to be displayed on a display means were held to be directed to patentable subject matter since the claims defined "a specific machine to produce a useful, concrete, and tangible result." <u>In re Alappat</u>, 33 F.3d 1526, 1544. Accordingly, computer based systems and software that manipulate financial information (<u>State Street</u>) or display relationships between information representing signal data (<u>Alappat</u>) are sufficiently "real world" to meet the useful, concrete and tangible test enunciated by the <u>State Street</u> Court.

A process that consists solely of the manipulation of an abstract idea, on the other hand, is not concrete or tangible. (See <u>In re Warmerdam</u>, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994) (holding that the dispositive issue for assessing compliance with 35 U.S.C. 101 was whether the claim was for a process that went beyond simply manipulating abstract ideas. The <u>Warmerdam</u> Court affirmed the rejection of Appellant's claims to a bubble hierarchy for lack of statutory subject matter, and reversed the rejection of a claim for indefiniteness)). The Manual of Patent Examining Procedure provides guidance for distinguishing between that which is useful, concrete and tangible and that which is not. The MPEP Version 8, Section 2106 provides that the "[o]ffice personnel have the burden to establish a prima facie case that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas or does not produce a useful result. <u>Only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. 101</u>." (Emphasis added). Having reviewed the law regarding the utility requirement under 35 U.S.C. 101, we next turn to applicant's claims.

The Examiner rejected claims 28-30, of which claim 28 is representative. Claim 28 as amended recites:

> 28.     A computer-readable medium, for an electronic trading system in which items are bought and sold responsive to orders submitted by traders, each order specifying a value and quantity for the order, said computer-readable medium comprising program instructions causing a processor to:
> display a first book axis representing orders for a first semi-fungible good; and
> display a second book axis representing orders for a second semi-fungible good;
> wherein displaying a book axis for a semi-fungible good comprises displaying at least one visual

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indicator for each order for the semi-fungible good along an axis corresponding to the semi-fungible good.

Applicant argues that claim 28 meets the utility requirement of 35 U.S.C. 101 because it is directed to a computer readable storage medium containing code that is designed to produce a useful, concrete, and tangible result. The subject matter of claim 28, a computer based method directed to trading of semi-fungible goods such as commodities or options contracts on underlying stocks, is more closely related to the trading and accounting invention of State Street than to the chemical structures of undisclosed use claimed by Brenner or the abstract bubble diagrams of Warmerdam. The computer based invention of State Street, which "transformed data, representing discrete dollar amounts" through a series of mathematical calculations "to arrive at a final share price." The State Street Court indicated that the final price was a useful, tangible and concrete result since the "final share price [is] momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." Analogously, Applicant's claim 28 contemplates the manipulation of data representing discrete orders for goods to arrive at a display of one or more visual indicators for each order for the good along a plurality of book axes. Similar to the computer based trading and accounting system in State Street, the display of a visual indicator against plural book axes of claim 28 provides a momentary fixed recordation of real world market data, i.e., orders for the goods being traded, which may be relied upon by a variety of persons, such as traders in the good(s), regulatory persons policing the market for the good, and the like. Applicant recites some of the specific and substantial benefits provided to users of the inventions of claims 28 - 30 on page 15, lines 4 - 10 of the specification as filed:

> The trader using the client terminal 104 in accordance with the present invention, is shown all of the outstanding orders 300, 304 for the item being traded. This is one significant difference between the present invention and conventional systems because a trader using a system in accordance with the present invention is able to view trends in the bids and offers in addition to the buying and selling of the item being traded. For example, in Figure 3a, a trader can quickly analyze the outstanding orders 300, 304, and determine that there are an almost equal number of bids 300 (8) as offers (9). Thus, the trader may infer that the market is stable, and the value for the item will not be dramatically driven up or down in the near future. (Emphasis added).

Applicant further notes in lines 11 – 19 of the same page:

> However, as shown in Figure 3b, if demand builds through an increased number of bids being made, as shown by the display of an increased number of bid icons 300, or bids are being made for large quantities, as shown by the display of bid icons 300 having a greater size, and if supply recedes as indicated by the display of a reduced number of offers icons 304, the trader can anticipate that the value for the item will increase. Consequently, the trader will place bids for the currently low valued offers 304. Thus, by viewing all outstanding offer icons 304 and bid icons 300 as they are made on an item, the trader can anticipate the market and quickly adjust his or her trading plans to take advantage of the information. In contrast, in conventional systems, the trader only knows the last highest bid and the last highest offer. (Emphasis added.)

Accordingly, the inventions of claims 28 – 30 can enable a user such as a trader to "infer that the market is stable, and the value for the item will not be dramatically driven up or down in the near future" and to "anticipate the market and quickly adjust his or her trading plans to take advantage of the information." Such information can enable a trader to make better, more profitable trades, or a regulator to make a more accurate assessment of the activities of traders in the marketplace. In view of the State Street Court finding that determining a final price is a useful, tangible and concrete result since the final share price is momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades and the Alappat Court finding that displaying the results of analysis of information representing quantities in the physical world constitutes "a specific machine to produce a useful, concrete, and tangible result," the inventions of claims 28 – 30 would also be held to constitute useful, concrete and tangible subject matter within the meaning of the utility requirement of 35 U.S.C. 101 since both display information about concrete and tangible physical quantities that is useful to the user.

In sum, the subject matter of claims 28 – 30, like that of the invention before the State Street Court, produce a useful, concrete, and tangible result that enable the user of the invention to better understand and manipulate the physical world about him. The State Street Court found the claimed subject matter before it to be within the bounds of patentable subject matter under 35 U.S.C. 101 because the claimed inventions produce a useful, concrete, and tangible result. Applicant argues that a similarly situated court would find claims 28 – 30 to recite a computer related product that produces a useful, concrete, and tangible result as well. Accordingly,

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withdrawal of the rejections and early allowance of the rejected claims are respectfully solicited for at least the foregoing reasons.

If the Examiner has any questions or needs any additional information, the Examiner is invited to telephone the undersigned attorney at 011-813-5774-1807.

Respectfully submitted,

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